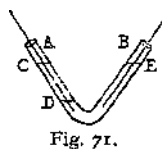


when a voltaic battery was used; but I have no doubt the present phenomena will prove to be virtually the same as those which that philosopher has described.

915. The effect interferes frequently in the ensuing experiments when *two* metals, hot and cold, are compared with each other; and the more so as the negative metal approximates in inactivity of character to platinum or rhodium. Thus in the comparison of cold copper, with hot silver, gold, or platinum, in dilute nitric acid, this effect tends to make the copper appear more positive than it otherwise would do.

916. *Place of the wire terminations.*—It is requisite that the end of the wire on the hot side should be in the heated fluid.



Two copper wires were put into diluted solution of sulphuret of potassium, fig. 71, that portion of the liquid extending from C to D

was heated, but the part between D and E remained cold. Whilst both ends of the wires were in the cold fluid, as in the figure, there were irregular movements of the galvanometer, small in degree, leaving the B wire positive.

Moving the wires about, but retaining them as in the figure, made no difference; but on raising the wire in A, so that its termination

should be in the hot fluid between C and D, then it became

positive and continued so. On lowering the end into the cold part, the former state recurred; on raising it into the hot part, the wire again became positive. The same is the case with two silver wires in dilute nitric acid; and though it appears

very curious that the current should increase in strength as the extent of bad conductor increases, yet such is often the case under these circumstances. There can be no reason to doubt that the part of the wire which is in the hot fluid at the A side, is at all times equally positive or nearly so; but at one time the whole of the current it produces is passing through the entire circuit by the wire in B, and at another, a part, or the whole, of it is circulating to the cold end of its own wire, only by the fluid in tube A.

917. *Cleaning the wires.*—That this should be carefully done has been already mentioned (869); but it is especially necessary to attend to the very extremities of the wires, for if these circular spaces, which occur in the most effective part of the circle, be left covered with the body produced on them in

a preceding  
trial, an experimental result will often be very  
much deranged,  
or even entirely falsified.